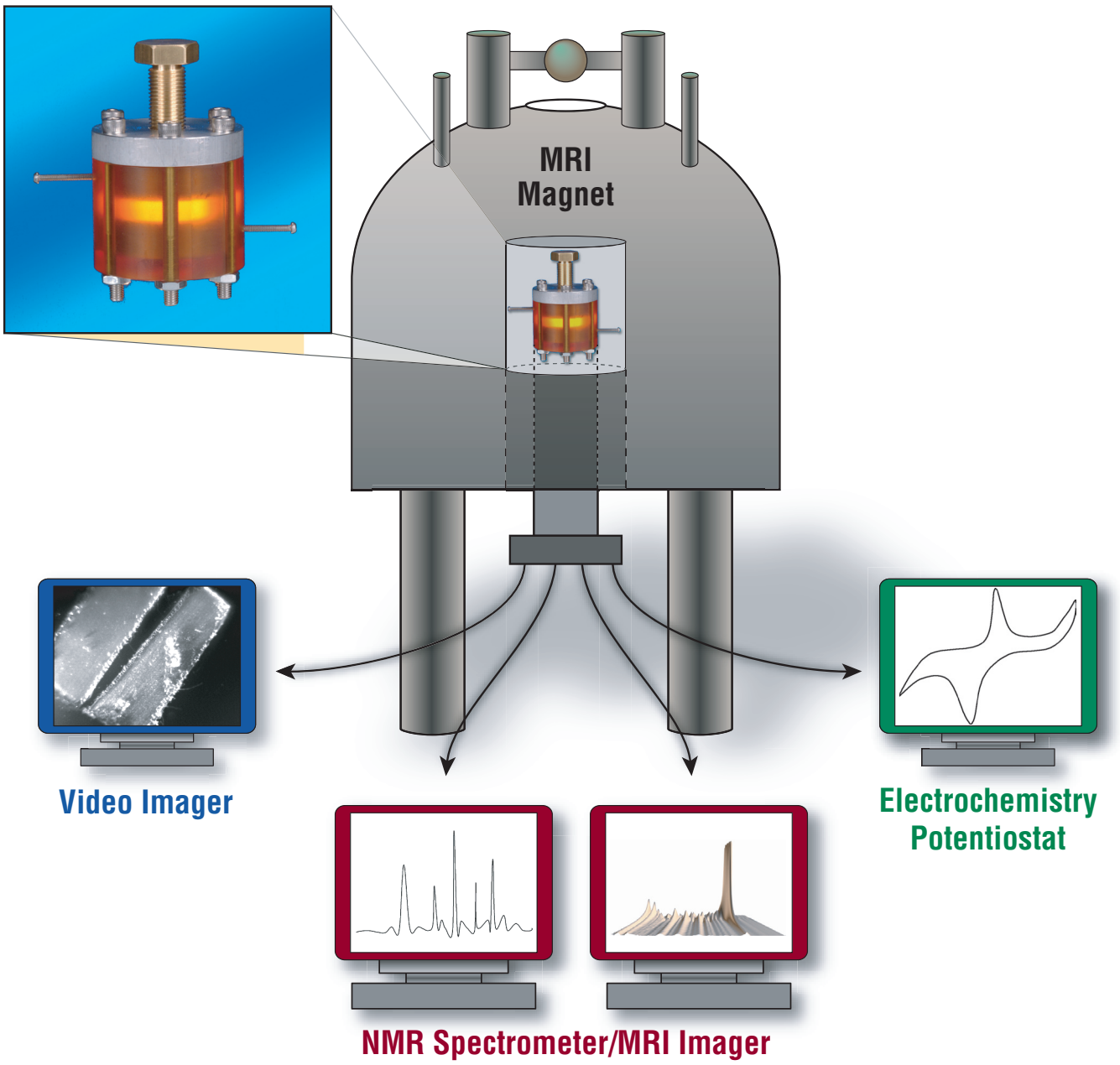

The Argonne Coin Cell NMR/MRI Imager can perform, for the first time, *in situ*, real-time analyses of thin films such as battery components by **nuclear magnetic resonance (NMR) spectroscopy and magnetic resonance imaging (MRI), electrochemistry measurements, and electrochemical synthesis of materials. Video monitoring** of films deposited on optically transparent windows is possible by adding an inexpensive miniature video camera.

The key to this remarkable, first-of-its-kind technology is the coupling of NMR spectroscopy and MRI imaging capability. One-dimensional MRI imaging separates the overlapped spectra generated by NMR spectroscopy to provide information never before available to electrochemical researchers.